

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY



(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference CO 0143 PCT/Bo/H | FOR FURTHER ACTION | | See Form PCT/PEA/416 |
| International application No. PCT/EP2004/014894 | International filing date (day/month/year) 23.12.2004 | Priority date (day/month/year) 23.12.2003 | |
| International Patent Classification (IPC) or national classification and IPC C25D7/06, C25D5/02, C25D19/00 | | | |
| Applicant CORUS STAAL BV et al. | | | |

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| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> |
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| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> |
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| Date of submission of the demand 15.09.2005 | Date of completion of this report 02.01.2006 |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized Officer Hammerstein, G Telephone No. +49 89 2399-8175  |

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/014894

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-8 as originally filed

Claims, Numbers

1-5 filed with telefax on 15.09.2005

Drawings, Sheets

1/10-10/10 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP2004/014894

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

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|-------------------------------|-------------|-----|
| Novelty (N) | Yes: Claims | 1-5 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-5 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-5 |
| | No: Claims | |

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Cited documents

Reference is made to the following documents:

- D1: PATENT ABSTRACTS OF JAPAN vol. 013, no. 423 (C-638), 20 September 1989
(1989-09-20) -& JP 01 159400 A (KAWASAKI STEEL CORP), 22 June 1989 (1989-
06-22)
- D2: US-B1-6 280 596 (WILKERSON RALPH ET AL) 28 August 2001 (2001-08-28)
- D3: US-A-5 804 053 (VACCARO ET AL) 8 September 1998 (1998-09-08)

Novelty and Inventivity, Article 33(2) and (3) PCT

D1 discloses an apparatus and process for electroplating a metal strip, whereby the anode is a basket filled with tin granules which dissolve into the electrolyte. As is obvious from figure 1 the electroplating device comprises an automated supply system 13/14 for the tin granules.

D2 discloses similar subject-matter in that it describes a process for tin plating of steel strip in an apparatus comprising a basket material 58 coated with an electrically insulating material and having a conductive lining 60.

The feature distinguishing claim 1 over the disclosure of D1 is adjustable masking means which solve the problem of adjusting the plating process to strips of differing width and/or thickness of the tin coating. Masking means are known in the prior art, see e.g. D3 which discloses a masking frame in a process of electroplating a plastic foam material using soluble anode material in anode baskets. A combination of the disclosure of both documents does, however, not lead to the subject-matter of claim 1 since the masking means are not adjustable and cannot therefore solve the problem posed.

Thus, claim 1 as well as dependent claims 2-5 meet the requirements of Article 33(1) PCT.

CLAIMS (Amended 15/09/2005)

1. Process for high speed metal strip electroplating wherein the strip is plated by anodically dissolving tin anodes facing the strip into an electroplating solution, and depositing said anodically dissolved tin on at least part of the strip acting as cathode, wherein tin is supplied to the electroplating solution in the form of pellets held in an anode basket, characterised in that part of the tin anodes is masked out using adjustable masking means that are controlled and guided dependent on strip width and/or tin coating thickness distribution.
2. Process according to claim 1, characterised in that the masking means comprise a shutter or blind
3. Process according to any one of the preceding claims, characterised in that the pellets are electrically contacted via a current collector made of a material with a low electrical resistance allowing for good electrical contact with the tin pellets and being electrochemically inert in the electrolyte.
4. Process according to claim 3, characterised in that the anode basket is so designed that it is the current collector.
5. Process according to any one of claims 1 – 4, characterised in that an automated supply system is provided to add tin pellets to the anode basket.